



EDUCATION AND HERITAGE SCRUTINY COMMITTEE

16TH JANUARY 2002

INDICES OF DEPRIVATION

**REPORT OF THE ACTING DIRECTOR OF PLANNING &
TRANSPORTATION**

PURPOSE

1. To inform the Scrutiny Committee about the official Indices of Deprivation published by central government, the major differences between them and the effects of applying each.

BACKGROUND

2. At its meeting on Wednesday, 5th December 2001, the Education and Heritage Scrutiny Committee received a report from the Chief Executive on the Leicestershire Early Years Development and Child Care Partnership - Nursery Education grant. The Committee requested a report on the official Indices of Deprivation used by the County Council. Three indices have been produced, based at 1991, 1996 and 2000. The characteristics of each are explained below.

1991 DOE INDEX OF LOCAL CONDITIONS (ILC)

3. The Index of Local Conditions (ILC) was developed by University of Manchester and published by the Department of Environment in 1994. It was based on data from the 1991 Census of Population. The ILC was the first attempt to measure deprivation in a consistent way for all wards in England. It was produced at three levels - local authority districts, wards and Census Enumeration Districts. The 7 indicators used to produce the ward-level score were:

- Unemployment (1991 census)
- Households lacking amenities (1991 census)
- Overcrowded housing (1991 census)
- Children in unsuitable accommodation (1991 census)
- Children in low earning households (1991 census)
- Households lacking a car (income proxy) (1991 census)
- Low educational participation aged 17 (1991 census)

4. A score for each ward was calculated using the "Chi-Squared" method. This compares the actual number with the expected number, given the size of a ward. For example, the actual number of households without a car in a ward is compared with the number that you would expect to find in that ward if car ownership levels were equally spread across England. If the actual figure is greater than the expected, the Chi-squared value is positive. Conversely if it were less that you would expect the value is negative. The higher the value, the more "deprived" that ward was considered to be on a particular indicator.
5. There was no weighting given to individual measures. The Overall Index was the sum of the 7 values for each ward. A positive Overall Index score indicated that an area had above average levels of deprivation and a negative score that it had below average levels of deprivation. If some measures were positive and some were negative, these would cancel each other out. This was recognised in producing the later 1998 Index of Local Deprivation, where only the positive values were added together to produce the overall index score to avoid positive values being cancelled out by negative values.
6. Using the 1991 ILC the range of values for Leicestershire wards was +5.33 (Hastings Ward in Charnwood Borough) to -13.82 (Brookside Ward in Oadby & Wigston Borough). A value of 0 means that the ward is equal to the England average, (where the actual value is same as the expected value). Only 7 out of 143 wards in Leicestershire had a positive score, indicating that only these wards were worse than the national average. The methodology used is less reliable for negative scores.
7. The ILC was developed as a measure of general deprivation for all local authority areas in England to inform the targeting of regeneration resources. It was specifically used in calculating the regional allocation of SRB Challenge Fund resources and as background information in assessing levels of deprivation in areas bidding for SRB Challenge Fund. It was also widely used by local authorities and others applying for lottery grants.

1998 INDEX OF LOCAL DEPRIVATION (ILD)

8. In 1997 the Department of Environment, Transport and Regions (DETR) commissioned the Centre for Urban Policy at University of Manchester to update the 1991 ILC to a 1996 base and to realign it to the new local authority boundaries arising from Local Government Review. Updating the 1991 indicators was complex and some of the indicators used in the 1991 ILC were retained. However some of the non-census indicators were refined, for example, the 1991 unemployment indicator was replaced with claimant count unemployment data. The 12 indicators used in 1998 ILD were as follows:
 - Unemployment (ONS 1997)
 - Housing lacking amenities (1991 census)
 - Overcrowded housing (1991 census)
 - Dependant children of income support recipients (1996 DSS data)

- Non income support recipients in receipt of council tax benefit (1996 DSS)
 - Low educational participation aged 17 (1991 census)
 - Low educational attainment (% 15 year olds gaining GCSE passes at grades D-G only plus those not gaining any GCSE passes) (1996 DfEE)
 - Standard mortality ratios for under 75 (1996) ONS - double weighted.
 - Home insurance weightings (1996) (Insurance companies) (crime proxy) - double weighted.
 - Derelict land (1993 DOE)
 - Male Long term unemployment/ unemployment ratio (1997 ONS)
 - Income support (DSS 1996)
9. Using the signed chi-square method, the indicators were 'standardised' and then 'transformed' to produce scores that provided a close distribution to the normal curve. As with the 1991 ILC the individual indicators were added together to produce either a positive or negative score with zero as the average level of deprivation in England. However only the positive values were summed to give an overall index score for each district.
10. The 1998 ILD was calculated for all 354 local authority districts in England as at 1st April 1998. All the districts were ranked, with 1 as most deprived local authority district. Districts with a ranking of 310 or over were all ranked as equal. The ranking of districts in Leicestershire were as follows:

<u>Local Authority District</u>	<u>National Ranking</u>
Blaby	308
Charnwood	310=
Harborough	310=
Hinckley & Bosworth	292
Melton	185
North West Leicestershire	161
Oadby & Wigston	235

INDICES OF DEPRIVATION 2000 (ID2000)

11. In late 1998 the DETR launched a review of the 1998 Index of Deprivation. The Department of Social Policy and Social Work at the University of Oxford was commissioned to undertake this review. After an extensive consultation exercise with users of the indices, both academic and non-academic, the Indices of Deprivation 2000 were published by DETR in August 2000.
12. The Indices of Deprivation 2000 (ID2000) comprise:
- Six Domain Indices at ward level (groupings of indicators)
 - An overall ward level Index of Multiple Deprivation (IMD 2000)
 - A supplementary Child Poverty ward level index (a subset of Income Domain)
 - Six summaries at the local authority district level of the overall IMD 2000

13. The Indices of Deprivation include 33 indicators organised into six domains; Income, Employment, Health & Disability, Education, Skills & Training, Housing and Geographical Access to Service. Appendix 1 explains the definition of domains and indicators used.
14. The indicators in each domain were combined to create a Domain Index. Within the individual domain all wards are given a 'score'. This score helps to understand whether one ward is more (or less) deprived than another. For the Income and Employment (and the supplementary Child Poverty Index) Domains the scores are based on percentage rates of the population affected by the type of deprivation.
15. For the Health & Disability; Education, Skills & Training; Housing; and Geographical Access to Services Domains, a different approach was applied to combine the scores, namely, a scientific procedure called Factor Analysis. The procedure overcomes problems caused by measuring indicators in different ways, for example, Mortality ratio cannot be added to the proportion of people receiving Attendance Allowance. The procedure also addresses issues of overlapping between indicators within a domain.
16. The six Domain Indices were then weighted and combined to build the overall ward level Index of Multiple Deprivation (IMD2000).
17. The individual domain indices were also assigned a national ranking. The overall Index of Multiple Deprivation helps to describe each ward by combining the information from all the six domains. There are 8,414 wards in England. The most deprived is ranked 1 and the least deprived is ranked 8,414.
18. The ID 2000 was developed to update the 1998 ILD using new information, which was previously not available. The ID 2000 is claimed to be more 'dynamic' in that most of the variables can be updated on a regular basis, for example benefits data. The other reason for updating the 1998 ILD was to provide detailed information needed to formulate policy to address the issues raised in the Social Exclusion Unit's report, "Bringing Britain Together; A National Strategy for Neighbourhood Renewal".

LIMITATIONS OF INDICES

19. Indices of deprivation are a valuable source of information about the spatial patterns of deprivation in England. All are official measures of deprivation. The 1991 ILC and the ID2000 can be used as a whole or alternatively the components within the Index can be disaggregated.
20. Despite the rigorous and systematic approach to developing indices of deprivation they still have weaknesses in measuring deprivation. The 1991 ILC was subject to lot of criticism owing to the indicators used and its inherent bias towards urban areas. A major factor in this is that urban wards are smaller in area and tend to be more homogenous than rural wards. Since rural wards are by nature large and population is dispersed,

deprivation is often disguised. The other major criticism of the ILC is that it was 'sensitive to the built form of local housing'. Hence areas with households living in flats (e.g. South East region) scored significantly higher on the Index. The ID 2000 went some way to address some of this criticism. However the indices all attempt to measure relative deprivation in a consistent way across the whole country. All the indices only represent an average for each geographic unit (e.g. districts or wards) and they do not assist the targeting of policy or resources within the smallest geographical unit (wards for the ID 2000). They can also be skewed by local factors, the presence of a number of houses or sheltered accommodation for elderly persons could affect the Income Domain score for a particular ward for example.

21. The prime purpose of the deprivation indices is to identify areas of need to help develop policies and target resources. However it is not possible to make direct comparison between the results of the 1991 ILC and ID 2000 since they use different indicators and different methods. Furthermore changes in ward boundaries during the period makes it impossible to compare the results. Therefore the results of the two ward-level indices do not measure success/failure of policy implementation.

COMPARING THE 1991 ILC TO THE IMD 2000 (WARD LEVEL RESULTS)

22. An analysis using the 1991 ILC shows that out of the top ten most deprived wards in Leicestershire four were in Charnwood (Hastings, Lemyngton, Woodthorpe and Ashby); two were in North West Leicestershire (Greenhill and Measham), one was in each of Harborough (Lutterworth Wycliffe), Hinckley & Bosworth (Bagworth), Melton (Egerton) and Oadby & Wigston (Bassett) [see map 1].
23. The IMD 2000 shows a different pattern of deprivation [see map 2]. Of the top ten most deprived wards, four were in North West Leicestershire (Greenhill, Oakthorpe & Donisthorpe, Coalville and Ibstock & Heather); three were in Charnwood (Woodthorpe, Hastings and Lemyngton); two were in Oadby and Wigston (Bassett and Central) and one was in Hinckley & Bosworth (Bagworth).
24. To illustrate the different ranking produced by each, Table 1 compares the top 10 most deprived wards using the 1991 ILC and IMD 2000, respectively. The Table also shows positions and movements of the ten wards in 1991 and 2000.

APPLYING ID 2000 IN LEICESTERSHIRE

25. Table 2 shows all the wards in Leicestershire locally ranked according to the IMD2000. The ward with a rank of 1 is the most deprived (Greenhill ward in North West Leicestershire) and 143 the least deprived (Lutterworth Linden ward in Harborough). The Table also shows for comparative purposes wards ranked according to the individual domains, including the supplementary child poverty index. It demonstrates the variability of ward

ranking according to the measure used. Woodthorpe for example, is ranked the second most deprived ward in Leicestershire using the IMD but is ranked 26 using the Health Domain and 109th using the Access Domain. Similarly Dunton in Harborough is ranked 131st in the IMD but 20th in the Access Domain. When selecting either the IMD 2000 or its component domains for use in targeting policies or resources care should be taken to ensure the most relevant is selected according to the purpose. The overall IMD 2000 is the most robust as it is based on the widest range of indicators. Individual domains (or the Child Poverty Index) may, however, be more appropriate if there is a better match with the intended purpose. For example, if the purpose is to identify areas of low income the Income Domain may be the most appropriate measure. It may also be appropriate to use local information to refine the ranking produced by the national statistics, for example, children in receipt of free school meals.

FUTURE INDICES OF DEPRIVATION

26. With the taking of the 2001 Census of Population last year and the data currently being processed for release towards the end of 2003, it is predicted that the ID 2000 will eventually be replaced with information from the new census and other official data sources. It is hoped that new information on deprivation will be produced at the lowest geographical level, for example, Census Output areas to enable better understanding of deprivation.

SUMMARY

27. This report has been concerned with the methods used to construct the official DOE 1991 Index of Local Conditions, 1998 Index of Local Deprivation and DETR Index of Deprivation 2000 and the output from these indices. The different techniques used to compile the Indices makes it difficult to compare the results from the indices.

28. The report also discussed the limitations of the deprivation indices and their results. It also compared the results of the 1991 DOE Index and ID 2000 for wards in Leicestershire. Wards in Leicestershire have also been ranked based on the IMD 2000 and compared this to their ranking according to the individual domains.

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